Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently amended) A method for measuring the relief of an object using a camera provided with an array of pixels, said method comprising the steps of:

~~j)~~ a) projecting a grid on a reference object; the grid being located at a first position relative to the camera and to the reference object;

~~k)~~ b) taking, with the camera, an image of the reference object illuminated by said projected grid; said image of the reference object having intensity values for each pixel;

~~l)~~ c) repeating steps a) and b) at least two times with the grid being located at two different known positions relative to the camera and to the reference object to yield at least three intensity values for each pixel;

~~m)~~ d) computing the reference object phase for each pixel using the at least three reference object intensity values for the corresponding pixel;

~~n)~~ e) projecting the grid on the object; the grid being located at said first position;

~~o)~~ f) taking with the camera an image of the object illuminated by said projected grid; said image of the object having intensity values for each pixel position;

~~p)~~ g) repeating steps e) and f) at least two times with the grid being located at said two different positions to yield at least three intensity values for each pixel;

~~g)~~ h) computing the object phase for each pixel position using the at least three object intensity values for the corresponding pixel; and

~~r)~~ i) computing the difference of height between the object and the reference object for each pixel using said reference object phase and said object phase for the corresponding pixel; and

j) using said difference of heights between the object and the reference object for each said pixel to determine the relief of the object.

2. (Cancelled)

3. (Original) A method as recited in claim 1, wherein, in at least one of steps d) and h), the phase $\Delta\Phi$ is computed for each pixel by solving the following system of equations:

$$I_n = A + B \cdot \cos(\Delta\Phi + \Delta\varphi_n)$$

where I_n represent the at least three intensity values, A and B are known coefficients and $\Delta\varphi_n$ are phase variations caused by the different locations of the grid.

4. (Original) A method as recited in claim 3, wherein said system of equations is solved using a numerical method.

5. (Original) A method as recited in claim 1, wherein, in step c), steps a) and b) are repeated more than two times with the grid being located at more than two different known positions relative to the camera and to the reference object to yield said at least three intensity values and at least one additional value for each pixel and, in step d), a selection is performed among the at least three intensity values and the at least one additional values to yield the three

most advantageous intensity values; said three most advantageous intensity values being used to compute the reference object phase for each pixel.

6. (Original) A method as recited in claim 5, wherein, in step c), steps a) and b) are repeated more than two times with the grid being located at more than two different known positions relative to the camera and to the reference object to yield more than three intensity values and, in step d), the three most advantageous values from said more than three most advantageous intensity values are used to compute the reference object phase for each pixel.

7. (Original) A method as recited in claim 1, wherein, in step g), steps e) and f) are repeated more than two times with the grid being located at more than two different known positions relative to the camera and to the object to yield said at least three intensity values and at least one additional value for each pixel and, in step h), a selection is performed among the at least three intensity values and the at least one additional values to yield the three most advantageous intensity values and said three most advantageous intensity values are used to compute the object phase for each pixel.

8. (Original) A method as recited in claim 1, wherein, in step g), steps a) and b) are repeated more than two times with the grid being located at more than two different known positions relative to the camera and to the object to yield more than three intensity values and, in step d) the three most advantageous values form said more than three intensity values are used to compute the object phase for each pixel.

9. (Original) A method as recited in claim 1, wherein, in step c), said two known positions of the grid are chosen so as to provide at least two images of the object having a 180 degrees difference in phase therebetween.

10. (Original) A method as recited in claim 9, wherein a two- dimensional image of the object is computed by subtracting said at least two images of the object having a 180 degrees

difference in phase therebetween; said two dimensional image being used to perform a preliminary analysis of the object.

11. (Original) A method as recited in claim 1, wherein, in step g), said two known positions of the grid are chosen so as to provide at least two images of the reference object having a 180 degrees difference in phase therebetween.

12. (Original) A method as recited in claim 1, wherein a two- dimensional image of the reference object is computed by subtracting said at least two images of the reference object having a 180 degrees difference in phase therebetween; said two dimensional image being used to perform a preliminary analysis of the reference object.

13. (Original) A method as recited in claim 1, wherein said reference object is a plane surface.

14. (Currently Amended) A method as recited in claim 1, wherein said reference object is said object at a past predetermined time and said reference object phase is computed around said past time; whereby step i) provides the variation of height at each pixel between said past time and the approximate time when the object phase is computed <u>and said step j) yields the variation with time of relief of the object</u>.

15. (Original) A method as recited of claim 1, wherein said reference object is a CAD of the object; said grid being virtually positioned and projected into said CAD in step a) and said image of said reference object being simulated in step b).

16. (Currently Amended) A system for measuring the relief of an object, said system comprising:

a grid projecting assembly;

an image acquisition apparatus including a camera provided with an array of pixels;

a computer configured for

a) receiving from the image acquisition apparatus at least three images of the projected grid onto the object and at least three images of the projected grid onto the reference object; each of said images of the projected grid onto the object corresponding to a different known position of the grid; each of said images of the projected grid onto the reference object corresponding to one of said known positions of the grid;

b) computing the reference object phase for each pixel using the at least three reference object intensity values for the corresponding pixel;

c) computing the object phase for each pixel using the at least three object intensity values for the corresponding pixel; and

d) computing the difference of height between the object and the reference object for each pixel using said reference object phase and said object phase for the corresponding pixel; and

e) using said difference of heights between the object and the reference object for each said pixel to determine the relief of the object.

17. (Original) The use of the method of claim 1 for lead-coplanarity inspection.